UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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ART UNIT	PAPER NUMBER
2187	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 March 2007*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-11 and 13-18* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-11,13-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail. Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This Office Action is in response to applicant's communication filed March 16,

2007 in response to PTO Office Action dated October 16, 2006 The applicant's remarks

and amendment to the specification and/or claims were considered with the results that

follow.

Claims 1, 3-11, and 13-18 have been presented for examination in this

application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-11, and 13-18 are rejected under 35 U.S.C. 102(e) as being

anticipated by Favor (US3 6,732,236).

As per claims 1, 3, and 4, Favor discloses a method comprising: executing a first

instruction in a processor; if the execution of the first instruction generates a cache

miss, associating the first instruction with the cache miss; enqueuing the first instruction for re-execution; and after the cache miss with which the first instruction is associated is serviced, re-executing the first instruction, the method further comprising associating the cache miss with a second instruction dependent on the first instruction, assigning an identifier to the cache miss and determining a priority of the instruction **[an access request involved in a cache miss, storing the cache miss in a retry queue while the cache fill is pending, detecting the return of the cache fill and inserting the access request associated with the cache miss for processing (column 1, lines 53-59); in the case of cache miss, the access request is transmitted to retrieve the requested data back to the cache (column 2, lines 32-35); if the address lookup determines that no matching is found indicating a cache miss, then the address lookup forward a cache fill request to the cache request queue (column 3, lines 23-26); the address tag is a seven bits and identifies the retry request queue (RRQ) entry with its associated cache line (column 4, lines 6-14); RRQ control logic compares the seven bit address tag to the entries located in the RRQ and changes the retry bit from ineligible to eligible for matching entries so the eligible retry can be inserted into arbitration module (column 4, lines 40-60)].**

As per claims 5-11 and 13-18, claims 5-11 and 13-18 encompass the same scope of the invention as those of claims 1, 3, and 4 in addition of a processor and a system having means for performing the method of claims 1, 3, and 4. Therefore, claims 5-11 and 13-18 are rejected for the same reasons as stated above with respect to claims 1, 3, and 4.

Response to Arguments

Applicant's arguments filed 3/16/07 have been fully considered but they are not

persuasive.

The Applicant has argued on page 8 of the March 16, 2007 response that...

> Favor does not teach associating the cache miss with a second instruction dependent on
>
> a read or a write instruction. Instead, Favor teaches a retry queue for instructions where the
>
> cache access would be a cache hit but for the fact that the desired cache line is being refilled.
>
> The access request is for all intents and purposes a cache hit, only the data is not
>
> instantaneously available. It, therefore, makes no sense to associate a cache miss with a second,
>
> dependent instruction.

The Examiner respectfully disagrees. The use of the term 'associating', as used

in claim 1, does not require that any specific action is required but merely identifies that

a relationship between the first instruction and the cache miss, and the cache miss and

the second instruction, exist. Favor teaches that an access request is "..associated with

a cache miss" (col. 1, lines 52-55). Favor also teaches that the retry queue detects (this

'detection' step will be interpreted as the second instruction) the pending cache fill (due

to the cache miss), which is 'dependent' upon the miss of the first instruction (original

request), and places the cache-miss requests in a queue for retrying when the load has

completed. Favor clearly indicates that an access request is associated with a cache

miss when the request is retried due to the pending cache fill (col. 1, lines 54-56)

(emphasis added). The propagation of the association may be interpreted as the

sequence of events from the inclusion of the original request, to that request being

associated with a cache miss, to that request being sent to the request queue due to the

miss, and that request being retried once the fill has occurred, all due to the association

of the original, and hence the second, instruction with the cache miss.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed; and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Brian R. Peugh whose telephone number is (571) 272-

4199. The examiner can normally be reached on Monday-Thursday from 7:00am to

4:30pm. The examiner can also be reached on alternate Friday's from 7:00am to

4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Donald Sparks, can be reached on (571) 272-4201. The fax phone number

for the organization where this application or proceeding is assigned is (703) 872-
9306872-9306.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 571-272-

2100.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Brian R. Peugh
Primary Examiner
Art Unit 2187
May 22, 2007